

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/JP2005/005311

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> A61K45/00, 31/7088, 48/00, A61P19/02, 25/00, 29/00,  
35/00//C12N15/09

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> A61K45/00-45/08, 31/00-31/80, 48/00, A61P1/00-43/00,  
C12N15/00-15/09

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2005  
Kokai Jitsuyo Shinan Koho 1971-2005 Toroku Jitsuyo Shinan Koho 1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MEDLINE (STN), EMBASE (STN), BIOSIS (STN), BIOTECHABS (STN), CAPLUS (STN),  
REGISTRY (STN), WPI (DIALOG), JSTPLUS (JOIS), JMEDPLUS (JOIS)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	WO 02/052007 A1 (LOCOMOGENE, INC.), 04 July, 2002 (04.07.02), Claims; examples; industrial applicability	1, 2, 7 3-6
X A	JP 2003-89647 A (Takada Seiyaku Kabushiki Kaisha), 28 March, 2003 (28.03.03), Full text	1, 7 2-6
X A	WO 2003/018033 A1 (THE UNIVERSITY OF BRITISH COLUMBIA), 06 March, 2003 (06.03.03), Claims; examples	1, 7 2-6

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
30 May, 2005 (30.05.05)

Date of mailing of the international search report  
14 June, 2005 (14.06.05)

Name and mailing address of the ISA/  
Japanese Patent Office

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	JP 2002-10784 A (Teijin Ltd.), 15 January, 2002 (15.01.02), Full text	1,7 2-6
X A	JP 2003-525243 A (THE UNIVERSITY OF BRITISH COLUMBIA), 26 August, 2003 (26.08.03), Full text	1,7 2-6
X A	JP 7-324035 A (LTT Institute Co., Ltd.), 12 December, 1995 (12.12.95), Full text	1,7 2-6
X A	JP 7-145062 A (LTT Institute Co., Ltd.), 06 June, 1995 (06.06.95), Full text	1,7 2-6
X A	WO 01/76630 A1 (Kyowa Hakko Kogyo Co., Ltd.), 18 October, 2001 (18.10.01), Claims; examples	1,7 2-6
X A	WO 01/21793 A1 (Nobuyuki MIYASAKA), 29 March, 2001 (29.03.01), Full text	1,7 2-6
X A	WO 00/53194 A1 (Takada Seiyaku Kabushiki Kaisha), 14 September, 2000 (14.09.00), Full text	1,7 2-6
Y A	JP 2001-503785 A (ANGIOTECH PHARMACEUTICALS, INC.), 21 March, 2001 (21.03.01), Full text	1,2,7 3-6
X A	WO 00/38693 A1 (Toray Industries, Inc.), 06 July, 2000 (06.07.00), Full text	13,19,20 14-18
X A	WO 01/51480 A1 (Takara Shuzo Kabushiki Kaisha), 19 July, 2001 (19.07.01), Claims; examples	13,20 14-19
X A	WO 01/95921 A1 (Kabushiki Kaisha Gifu Shellac Seizoshu), 20 December, 2001 (20.12.01), Claims; test examples	13,19,20 14-18
X A	WO 97/47622 A1 (Japan Tobacco Inc.), 18 December, 1997 (18.12.97), Claims; examples	13,20 14-19

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	JP 8-73453 A (Otsuka Pharmaceutical Co., Ltd.), 19 March, 1996 (19.03.96), Full text	13, 19, 20 14-18
L	CATTANEO, M., et al., Identification of a region within SEL1L protein required for tumour growth inhibition. Gene, 2004, 326, pages 149 to 156 (Disclosed are that tumour growth is inhibited by SEL1L having Hrd3 motif and that inhibiting action of tumour cell growth is weakened by deletion mutant of SEL1L)	1-7
A	WO 99/28457 A1 (Otsuka Pharmaceutical Co., Ltd.), 10 June, 1999 (10.06.99),	1-7
A	AMANO, T., et al., Synoviolin/Hrd1, an E3 ubiquitin ligase, as a novel pathogenic factor for arthropathy., Genes & Development, 2003, 17, pages 2436 to 2449	1-7
A	GARDNER, R.G., et al., Endoplasmic Reticulum Degradation Requires Lumen to Cytosol Signaling: Transmembrane Control of Hrd1p by Hrd3p., Journal of Cell Biology, 2000, 151(1), pages 69 to 82	1-7
P,X P,A	WO 2005/018675 A1 (LOCOMOGENE, INC.), 03 March, 2005 (03.03.05), Claims; examples	1, 2, 7 3-6
P,A	Naoko YAGISHITA et al., "Kansetsu Rheumatism Hassho no Byoin Bunshi Synoviolin", Igaku no Ayumi, 02 October, 2004 (02.10.04), 211(1), pages 124 to 128	1-7
T	YAGISHITA, N., et al., Essential Role of Synoviolin in Embryogenesis., Journal of Biological Chemistry, 2005, 280, pages 7909 to 7916	1-7

**INTERNATIONAL SEARCH REPORT**  
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**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 8-12  
because they relate to subject matter not required to be searched by this Authority, namely:  
The inventions as set forth in claims 8 to 12 pertain to methods for treatment of the human body by therapy.  
(Article 17(2)(a)(i) of the PCT, Rule 39.1(iv) of the Regulations under the PCT)
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

o With respect to claims 1-7 and 13-20:

All the inventions of claims 2-7 directly or indirectly quote claim 1, and it appears that the technical matter common to the inventions of claims 1-7 is "pharmaceutical composition capable of suppressing the multiplication of synovial cells" claimed in claim 1.

On the other hand, all the inventions of claims 14-20 directly or indirectly quote claim 13, and it appears that the technical matter common to the inventions of claims 13-20 is "pharmaceutical composition comprising a substance capable of suppressing the production of interleukin 6" claimed in claim 1.  
(Continued to extra sheet)

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.  
☒ No protest accompanied the payment of additional search fees.

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Continuation of Box No.III of continuation of first sheet(2)

Although it appears that the technical matter common to the inventions of claims 1-7 and the inventions of claims 13-20 is a pharmaceutical composition per se, the pharmaceutical composition per se is a technical matter publicly known by persons skilled in the art to which the inventions pertain. Further, with respect to the "pharmaceutical composition capable of suppressing the multiplication of synovial cells" and "pharmaceutical composition comprising a substance capable of suppressing the production of interleukin 6" as well, they are a publicly known matter as respectively described in JP 2003-89647 A and WO 00/38693 A1, and hence this matter cannot be special technical features.

Consequently, these inventions cannot be stated as being linked with each other so as to form a single general inventive concept and hence fail to satisfy the requirement of unity of invention.

Therefore, it appears that the claims 1-7 and 13-20 claim the following two inventions not forming a single general inventive concept:

- 1) invention of claims 1-7, and
- 2) invention of claims 13-20.

With respect to claims 1-3, 7, 13-15, 19 and 20:

All the inventions of these claims relate to pharmaceuticals, and the active ingredients thereof are only defined by their functions.

However, since from provided description, what chemical structures give compounds with the functions cannot be stated as being obvious to even persons skilled in the art to which the inventions pertain, simply specifying of the functions is not sufficient to clarify what compounds are active ingredients.

Further, according to the contents of the description of this application, the compositions whose concrete results showing the functions are ascertained are only those containing nucleic acids specified in claims 4 to 6 and 16 to 18. Since there is no description as to those containing other ingredients, it does not appear that with respect to those as well, exhibiting of the same activity as mentioned in the description has been shown.

Therefore, in view of the way of drafting of claims 1-3, 7, 13-15, 19 and 20, the inventions of these claims are unclear. Further, in view of the way of drafting of the description, it cannot be stated that the description is sufficiently clear and complete for the inventions of the claims to be carried out by persons skilled in the art to which the inventions pertain, and it cannot be stated that the description is drafted so as to fully support the inventions of these claims (PCT Article 5 and Article 6).

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As the description of this application is lacking in the support for the inventions of these claims, it is to be noted that in the preparation of this international search report, prior art search has been limited to those whose active ingredients are nucleic acids specified in claims 4 to 6 and 16 to 18 and rational scope based on the contents of the description.